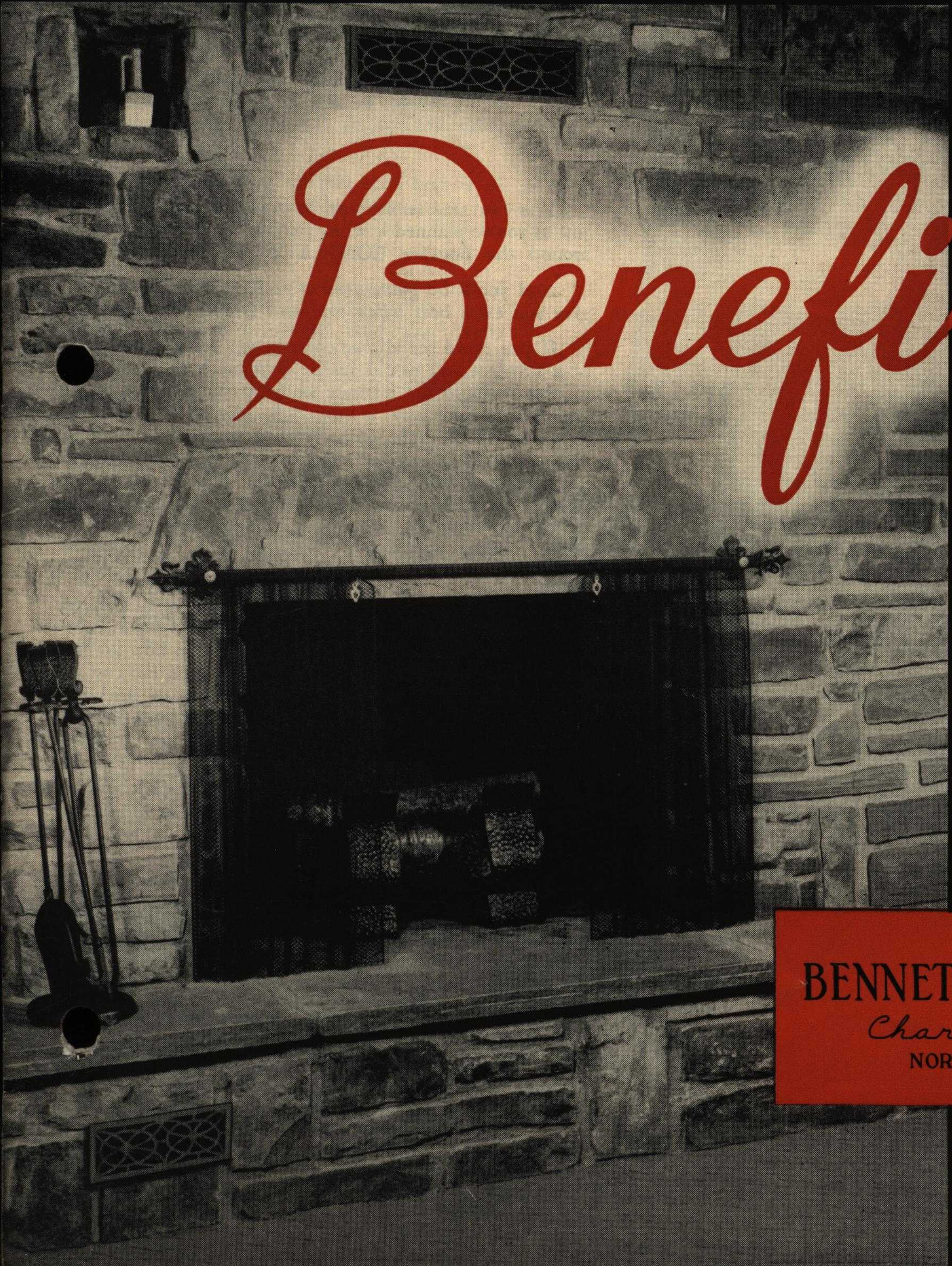
IT COSTS LESS TO BUILD YOUR PERFECT FIREPLACE WITH



Benefire®

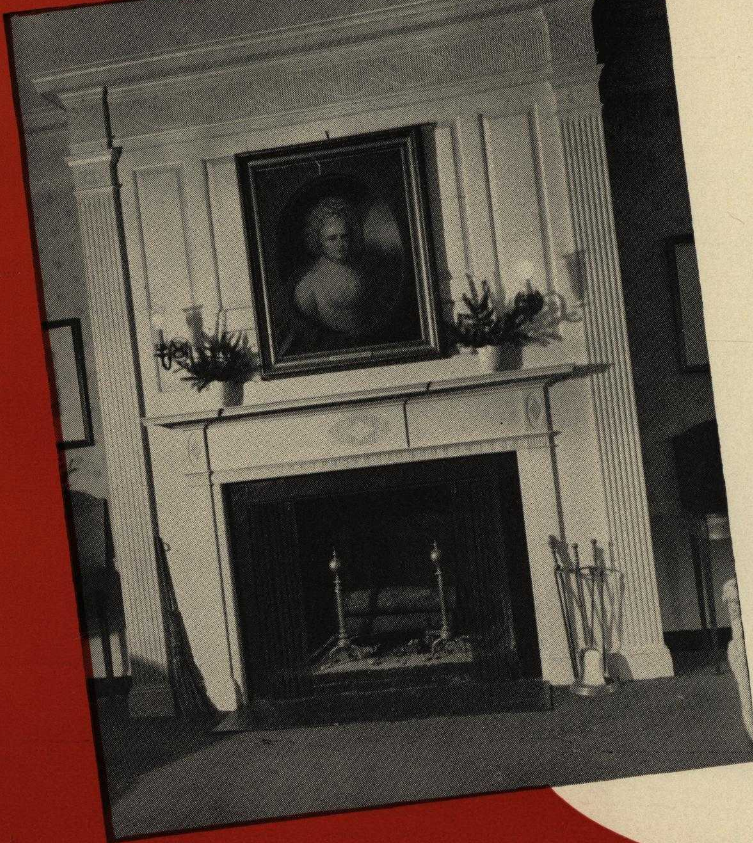
COMPLETE FIREPLACE FORM

BENNETT - IRELAND INC.
Chartered in 1906
NORWICH, NEW YORK

Benefire® - FOR A BETTER FIR

WHETHER YOUR "DREAM" FIREPLACE

YOU CAN BUILD IT BETTER AT LESS COST WITH THE *Benefire*® COMPLETE FIREPLACE FORM



You can save money and have that beautiful fireplace just as you've planned it when you build a Bennett fireplace around the *Benefire* COMPLETE FIREPLACE FORM.

And you'll be *guaranteed* a perfect fireplace that will give you extra heat *when you need it* and be *smoke-free.*

If you could see all the construction behind the facing of a fireplace you would realize how much skill and time it takes to build the intricate smoke passage out of bricks and mortar and have it *just* right. Even a small error may cause poor draft. Once built, a smoking fireplace is very expensive to correct. Proper slant of side walls and angle of back wall are important too, if your fireplace is to work properly. Solve these problems easily by building around the *complete, thoroughly proven Benefire* fireplace form. Follow our simple directions and we *guarantee draft for your mason.*

Benefire is a heavy steel form completely hidden by the masonry which is laid around it. Throat damper, combustion chamber, down draft shelf and fire box are all provided in this form. This not only saves on the cost of materials but also saves the mason the time of brick-by-brick, rule-of-thumb laying of these complicated out-of-sight details.

THE BENNETT GUARANTEE

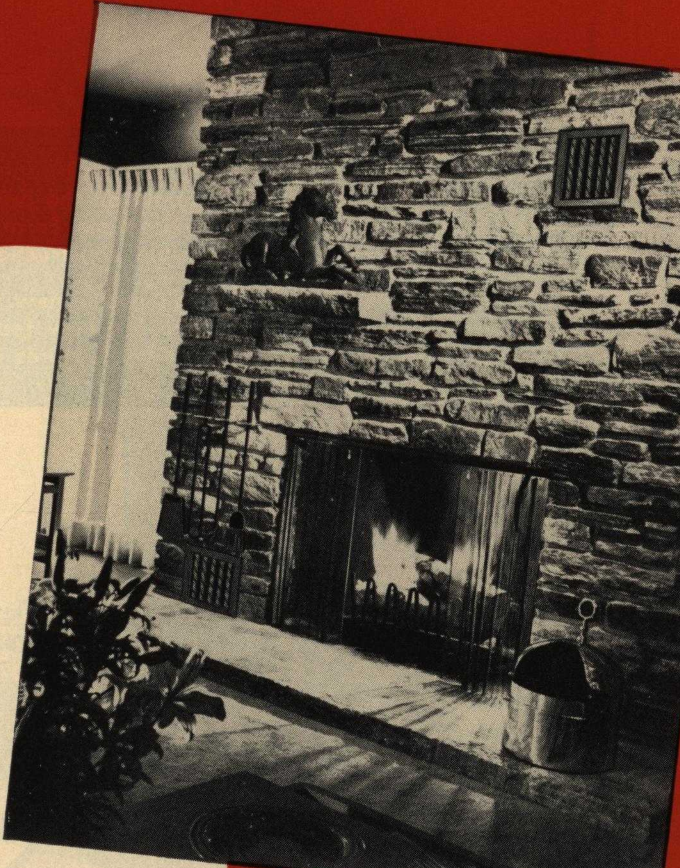
We will refund the entire purchase price through your dealer, plus up to $50.00 additional for removal, rebuilding and return of the form, if any fireplace built in accordance with our printed directions smokes from any inherent fault, does not give the extra heat stated in this book or if the form is defective in material or workmanship. We reserve the right to inspect the fireplace and recommend corrections before removal.

This offer stands for three full months after installation and operation.

Copyright Bennett-Ireland, Inc. 1955

EPLACE AT LESS COST

IS SIMPLE OR ELABORATE . . .



The *Benefire* form also contains heating chambers around the fire box through which air is circulated, becomes thoroughly warmed and flows back into the room.

With a common fireplace this extra heat is all wasted up the chimney. In vacation camps and many other situations a fireplace built with *Benefire* can be a primary source of heat.

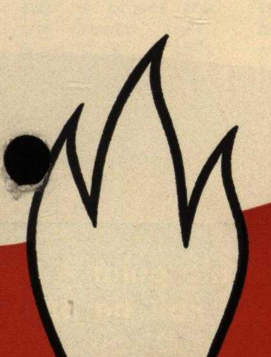
In a modern house even though the central heating system is thoroughly adequate, this extra warmth is needed to temper cold floor drafts which occur when *any* fireplace is burning. Then of course there are those power failure *emergencies* when your *Benefire* fireplace can serve as an efficient auxiliary source of heat.

Benefire GIVES YOU EXTRA BENEFITS

1. The *finished fireplace* costs you *less.*
2. Smoke-free construction *guaranteed.*
3. Generous extra heat *when you need it.*
4. *Stops* cold floor drafts.

Yet it does not in any way affect the outward appearance of your fireplace.

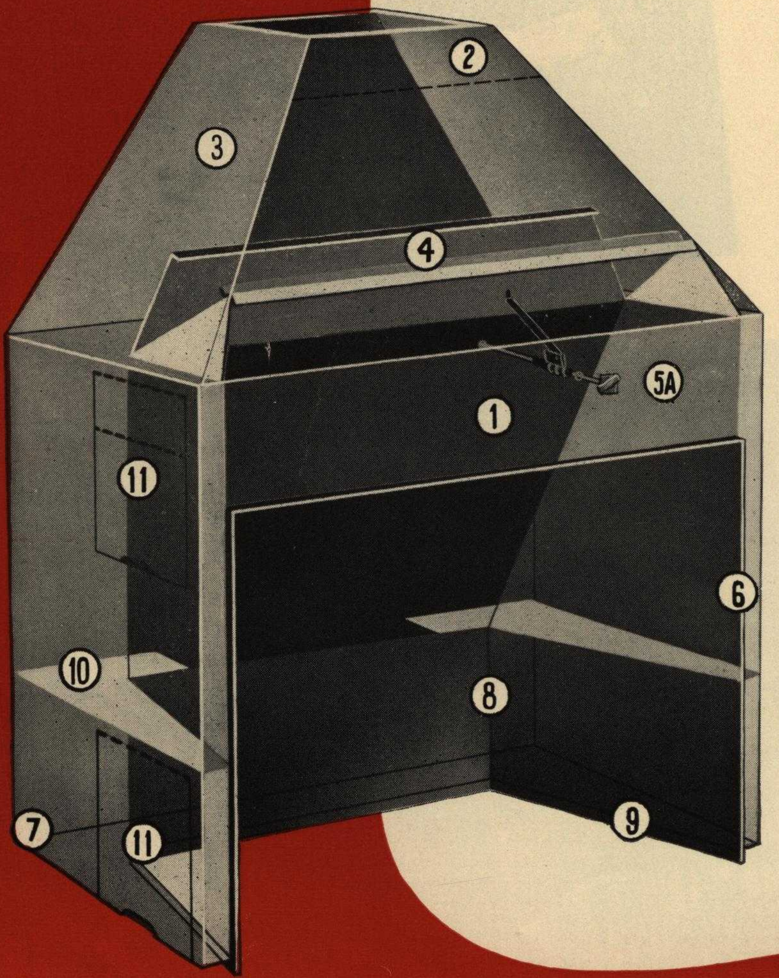
("Benefire" is the registered Trade Mark of Bennett-Ireland, Inc., an organization that has specialized in the fireplace field for over 30 years. We are proud of the quality of our products, practical experience and reputation of "Authorities on Fireplaces.")



HERE'S WHY IT COSTS LE

Bennett-Ireland has been making fireplace forms for over thirty years, steadily improving them from year to year, frequently on the basis of practical information gained from our mason friends. This **newest** Bennett Fireplace Form incorporates still further improvements, especially along the line of lowest possible construction costs.

But the **"new" Benefire** isn't really new. It's still **the complete form** from hearth to flue, and the price is the same. But there are new features — just simple things that make a world of difference. (You will note these new features indicated by asterisks in the following copy.)



LET'S LOOK AT SOME OF THE OUTSTANDING FEATURES AND COST SAVERS

1. **COMPLETE FORM FROM HEARTH TO FLUE —** *Benefire* is a complete form — all around and right up to the flue. Just set the unit on the hearth, place the flue on the unit, and lay up the masonry.

* 2. **ADJUSTABLE FLUE CONNECTION —** Metal form is full height to meet and support flue tile. On those sizes of *Benefire* (Nos. 35 and 43) where a larger flue tile should be used on short chimneys, just cut the two light "tack welds" with a cold chisel and bend out the top to fit.

3. **COMPLETE FORM FOR SMOKE FUNNELING CHAMBER —** Saves "free hand," stepped corbeling; smooth smoke flow all the way up.

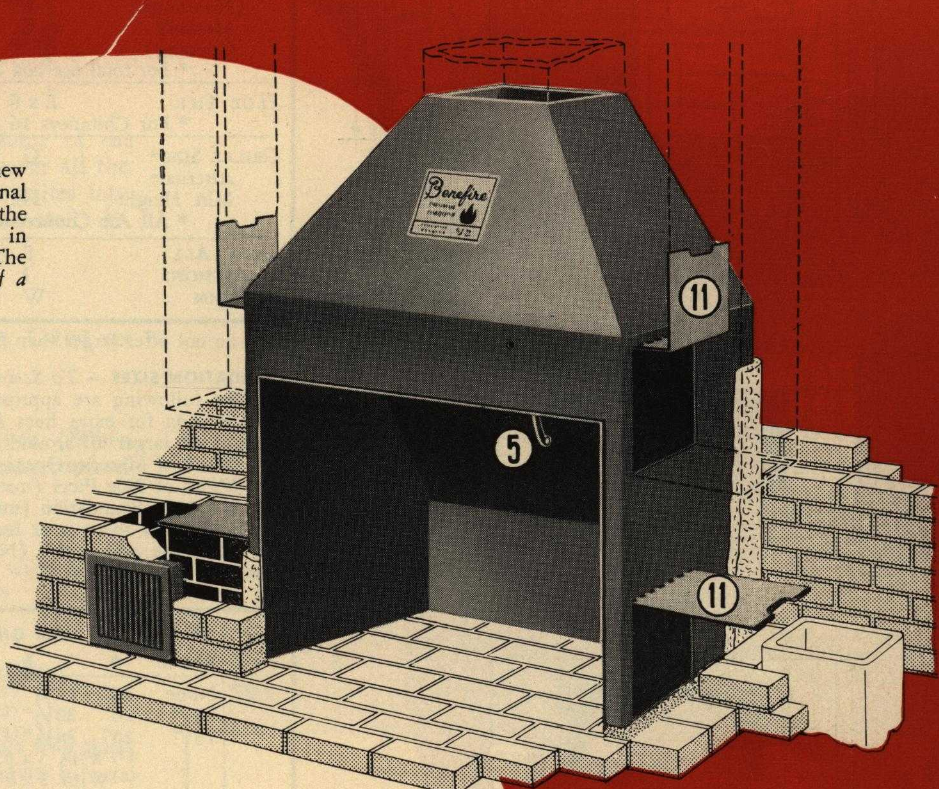
* 4. **TIGHT CLOSING DAMPER —** Effectively stops heat loss from room, and prevents cold floors from down drafts when fireplace is not in use. Does not depend on packing.

5. **EXACT DRAFT CONTROL —** Intermediate settings control excess heat loss whether you choose the simple "Ratchet" or convenient outside "Rotary" (see 5A). The common fireplace very generally has a rotary control because of public demand, yet in the field of fireplace units this feature is found ONLY on the *Benefire*. Neither relies on short lived springs or friction.

6. **WELL PROPORTIONED OPENING —** Depth and height are carefully related to each width to gain broadest view of fire, most radiant heat and generous fuel capacity.

All these features add up to the big point — that n
with **Benefire, a really better fireplace can be built at**

SS TO BUILD WITH *Benefire*®



* 7. **NEW SQUARE FORM** — Square sides on the new *Benefire* eliminates slow, troublesome diagonal courses. Incidentally the bigger air chambers of the new *Benefire* occupy more space, save masonry, in addition to giving larger heating capacity. The average size now "displaces" 116 bricks — *half a ton* of masonry.

8. **DOUBLE-WELDED FIRE BOX** — Heavy boiler plate, graduated in thickness of up to 1/4" thick for even heat distribution, is *double-welded* — more expensive than "one piece," but stronger.

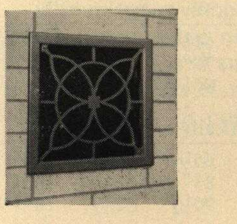
9. **ALL-AROUND SEALING FLANGE** — Around both front *and bottom*. Speeds construction, seals surely against heat and smoke leaks, holds glass wool in place.

10. **EXTRA LONG BAFFLES** — Conduct incoming cool air to hottest part of fire box. Cools metal evenly, gains extra heat.

11. **NEW "DUCTOPS"** — Here is a real time saver. Just bend up the "knock outs" to the required angle and you have a form for the troublesome part of the duct work. Now with "Ductops" it's actually faster and cheaper to build ducts than to lay solid masonry. If you run the outlets straight up and have the grilles near the ceiling (where they look and work best) you can *save up to another half ton of masonry!*

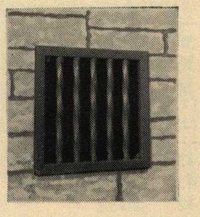
BENNETT GRILLES — Distinctive and Attractive

Only Bennett offers you this wide variety of grille designs to choose for intakes and outlets. Some add a decorative touch — others are simple and inconspicuous.

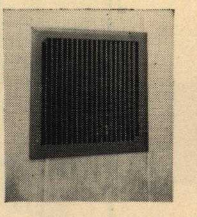


C-176 CAST IRON
Simplicity of design is proper for any mantel style. Sizes 5"x8", 8"x8", 8" x 10", 14" x 5".

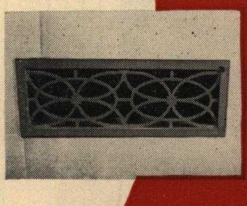
C-180 CAST IRON
Graceful spindles suitable to many fireplaces, especially paneled. Sizes 5" x 8", 8" x 8".



C-179 CAST IRON
Twisted bar design recommended for rugged masonry and camps. Sizes 5" x 8", 8" x 8", 8" x 10".



C-182 STAMPED STEEL
Modern, simple, inconspicuous air-flow design. Sizes 5" x 8", 8" x 8", 10" x 8", 14" x 5".



C-176 CAST IRON
Elongated design for use in side returns or baseboards. Size 14" x 5".

The elongated shape (size 14" x 5") is often used as a baseboard intake or at the sides of the chimney if there is not space for square or rectangular shapes.

ELECTRIC BLOWER FANS. These Blower Fans, added to the air intake grilles, increase the heat delivery as much as 30%. They fit grille sizes 5" x 8", 8" x 8" and 10" x 8", 60 cycle, A.C., only.

Both fans should be connected in parallel, controlled by a single wall switch, which is sometimes equipped with a pilot light to show when the fans are running.

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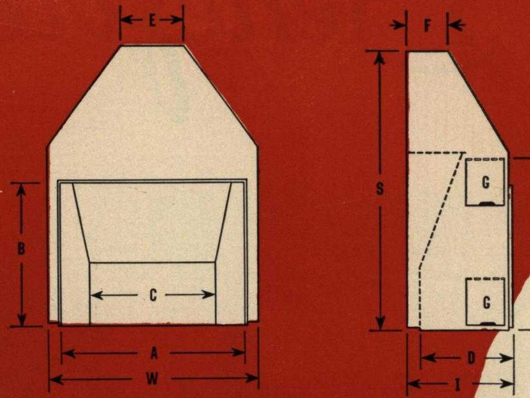
n appreciably lower cost.

CONSTRUCTI



DIMENSIONS OF BENEFIRE FORM

Size of Unit		27	31	35	39	43	50
FIRE BOX	A	26″	30″	34″	38″	42″	49″
(Maximum	B	25	26	27	28	30	32
Masonry	C	18	21	24	28	31	37
Opening)	D*	14	16	17	17½	19	21
* For total fire box depth, add facing thickness (usually 4″, never exceed 6″).							
FLUE TILE	E x F	13 x 8½	13 x 8½	13 x 8½*	13 x 13	13 x 13*	18 x 13
* For Chimneys 16 to 20 feet high, use next larger tile size.							
GRILLE SIZE*	G	5 x 8	5 x 8	8 x 8	8 x 8	8 x 8	8 x 10
Alternate		8 x 5	8 x 5	12 x 5	12 x 5	12 x 5	10 x 8
Min. Height	H	29½	31½	32½	33½	35½	40½
* All Air Connections at Unit and "Ductops," 8 x 10″.							
OVER - ALL	S	45	49	53	58	63	69
DIMENSIONS	I	16½	18½	20¼	20¼	22	24
OF FORM	W	31	34	39	43	47	53

We do not offer larger than No. 50 as they are not efficient or practical.

FOUNDATION SIZES — *To Scale, Count Bricks* (based on brick 7¾″ long with ½″ bonds)

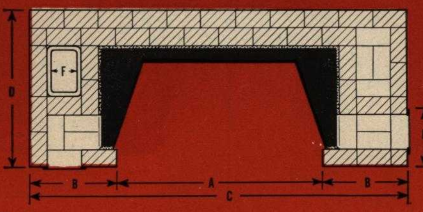
The following are approximate basic dimensions with front or side grille locations and provision for extra flues from below for heater or other fireplace. Footings should be about 6″ larger all around and 8″ to 12″ thick.

A = Width of Masonry Opening (max.)
B = Width of Side Piers (min.)
C = Width of Foundation (min.)
D = Front to Back Depth, Foundtn. (min.)
E = Return to Side Wall (min.)
F = "Width" of Flue Tile

Notice that there is at least 6″ of masonry behind the fire box and that the facing in front of the unit is 4″. (Never exceed 6″ even with stone because a deep, flat lintel causes smoking.)

	"F" Flue	With Grilles in Front				With Grilles at Sides				
	Dimen.	A	B	C	D	A	B	C	D	E
#27	None	26″	11¾″(1)	49½″	28¾″	26″	11¾″	49½″	28¾″	10″(1)
	8½″	26″	20½″(2)	67″	28¾″	26″	20½″	67″	28¾″	10″(1)
	13 ″	26″	24¼″(2)	74½″	28¾″	26″	24¼″	74½″	28¾″	10″(1)
		(1) With 5 x 8″ Grille set vertically. (2) With 5 x 8″ Grille set either vertically or horizontally.								
#31	None	30″	11¾″(1)	53½″	28¾″	30″	11¾″	53½″	28¾″	10″(1)
	8½″	30″	20½″(2)	71″	28¾″	30″	20½″	71″	28¾″	10″(1)
	13 ″	30″	24¼″(2)	78½″	28¾″	30″	24¼″	78½″	28¾″	10″(1)
		(1) With 5 x 8″ Grille set vertically. (2) With 5 x 8″ Grille set either vertically or horizontally.								
#35	None	34″	11¾″(1)	57½″	32½″	34″	11¾″	57½″	32½″	10″(1)
	8½″	34″	20½″(2)	75″	32½″	34″	20½″	75″	32½″	10″(1)
	13 ″	34″	24¼″(2)	82½″	32½″	34″	24¼″	82½″	32½″	10″(1)
		(1) With 5 x 12″ Grille set vertically. (2) With 8 x 8″ or 12 x 5″ Grille set either vertically or horizontally.								
#39	None	38″	11¾″(1)	61½″	32½″	38″	11¾″	61½″	32½″	10″(1)
	8½″	38″	20½″(2)	79″	32½″	38″	20½″	79″	32½″	10″(1)
	13 ″	38″	24¼″(2)	86½″	32½″	38″	24¼″	86½″	32½″	10″(1)
		(1) With 5 x 12″ Grille set vertically. (2) With 8 x 8″ or 12 x 5″ Grille set either vertically or horizontally								
#43	None	42″	11¾″(1)	65½″	32½″	42″	11¾″	65½″	32½″	10″(1)
	8½″	42″	20½″(2)	83″	32½″	42″	20½″	83″	32½″	10″(1)
	13 ″	42″	24¼″(2)	90½″	32½″	42″	24¼″	90½″	32½″	10″(1)
		(1) With 5 x 12″ Grille set vertically. (2) With 8 x 8″ or 12 x 5″ Grille set either vertically or horizontally.								
#50	None	49″	16″(1)	81″	37″	49″	11¾″	72½″	37″	14″(1)
	8½″	49″	20½″(2)	90″	37″	49″	20½″	90″	37″	14″(1)
	13 ″	49″	24¼″(2)	97½″	37″	49″	24¼″	97½″	37″	14″(1)
		(1) With 8 x 10″ Grille set vertically. (2) With 8 x 10″ Grille set either vertically or horizontally.								

For other duct arrangements see Elevations opposite.



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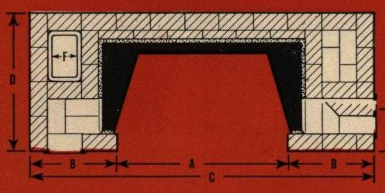

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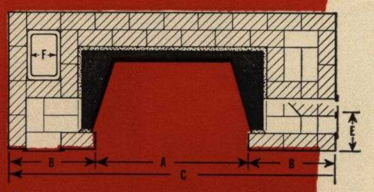

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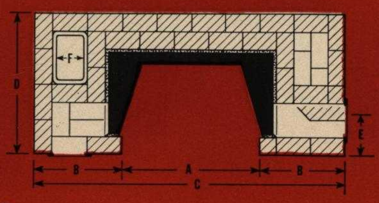

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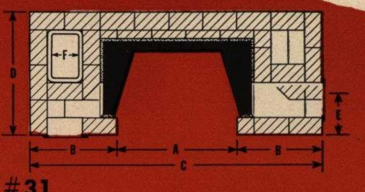

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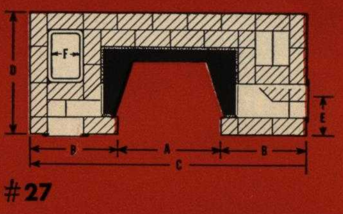
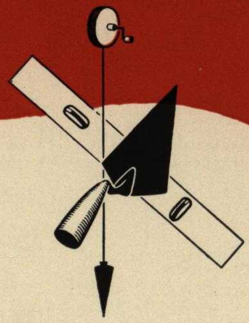


#27

ON DETAILS



GRILLE LOCATIONS — These diagrams show some of the more usual arrangements of ducts. They do not cover all the many possibilities for blending standard *Benefire* grilles into the general architectural treatment or, where warranted, designing special grilles.

A. Facing flush with wall, outlet grilles No. C-180 set well above line of vision.

B. Grilles (No. C-182) set in walls or woodwork. (When ducts are run outside of masonry, use asbestos covered sheet metal.)

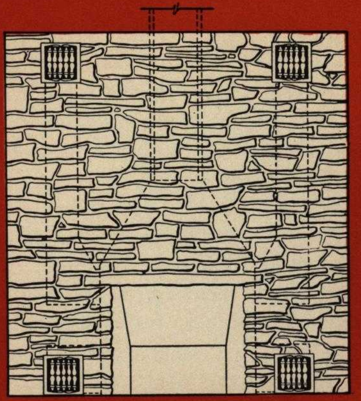
C. Simple projecting mantel with grilles 5" wide set in returns. (Place outlets as *high* as possible.)

D. Similar to **C** but with grilles placed near ceiling.

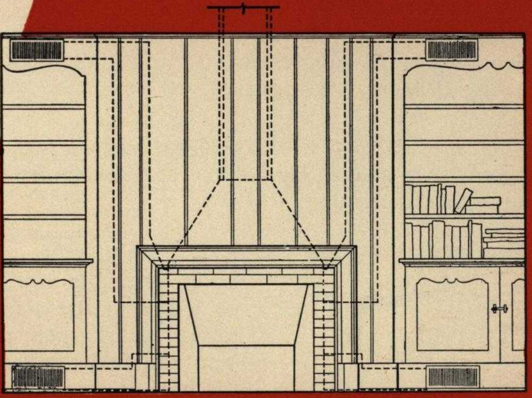
E. A single center grille, near the ceiling blends well with many types of fireplaces. (C-176 design shown.)

F. Heat Outlets in other rooms ("A" above or "B" at back.) Ducts should run only to rooms adjacent to the chimney, never long distances. (C-179 grilles shown for intakes in raised hearth.)

Always plan to place warm air *outlet grilles as high as possible,* preferably near the ceiling. In that way heating efficiency is increased and the best appearance is achieved. Ducts from the *Benefire* to the outlet grilles should always slant upward as steeply as possible, never be level.



A



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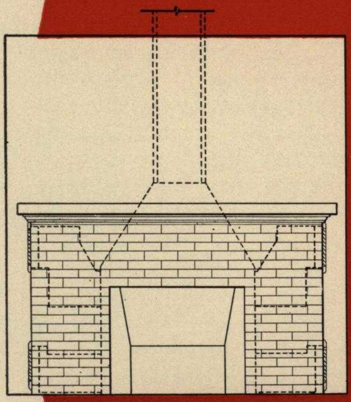

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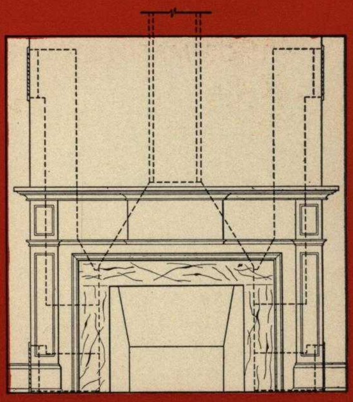

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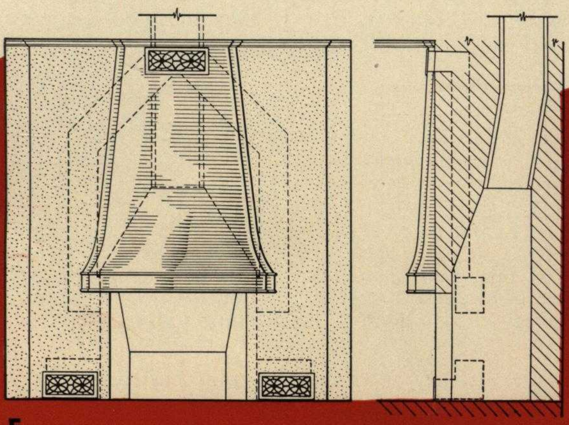
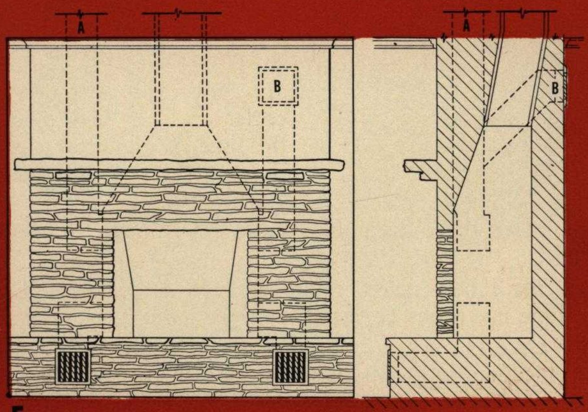


E



F

DIRECTIONS TO THE MASON

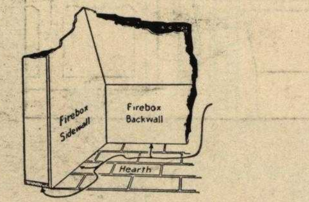
This *new Benefire,* you will find, has several features that are important in making it easier for you to do an even better job:

1. The New *Square-shaped Form* — Now there are *no diagonal* courses to lay around the fire box, just straight-away, four-square work. The larger heat chambers save in the number of bricks, too.
2. The New *Depth Dimensions* (some sizes are deeper), now all lay up perfectly to brick size without cutting or filling.
3. The New *"Ductops"* — Just lift the "knock outs" at each side, bend them up to the proper angle and you have the best and simplest form for the top of the air ducts.
4. The Sealing Flange *all around the bottom of the fire box as well as around the front* speeds your work in making tight joints with glass wool or mortar.
5. The New *Adjustable Flue Connection* — On those sizes of *Benefire* (Nos. 35 and 43) where a larger flue tile should be used on short chimneys, just cut the two light "tack welds" with a cold chisel and bend out the top to fit.

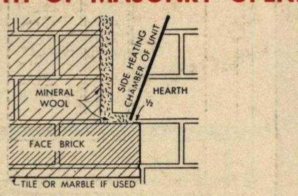
Bennett gets its improvements from our mason friends. That's why *Benefire* is so practical.

FOUNDATION SIZE — See page 6 for various plans. To check dimensions, it is wise to lay out the first course *dry* before proceeding with construction.

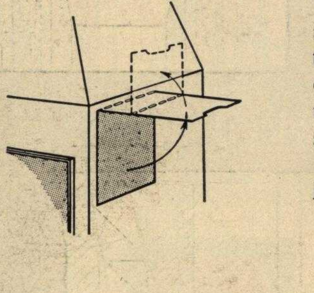
SETTING THE BENEFIRE FORM — After the fire brick hearth is set, place the unit in position on a bed of fire clay ½" thick to seal against smoke or air leaks. You will find the flange around the base of the *Benefire* helpful in making a tight, neat junction with the hearth.



WIDTH OF MASONRY OPENING — Set the facing course of masonry so that it overlaps the front flanges of the form at least ½". Thus the fireplace opening is one full inch narrower than the fire box. Also leave ⅛" space between the masonry facing and the metal flange of the form.



AIR DUCTS AND GRILLES — See Page 7 for various locations. The new Benefire *duct forms* are a real help. Just lift each of the four knock outs at the sides of the unit and bend them up to the angle needed to form and support the top of the duct.

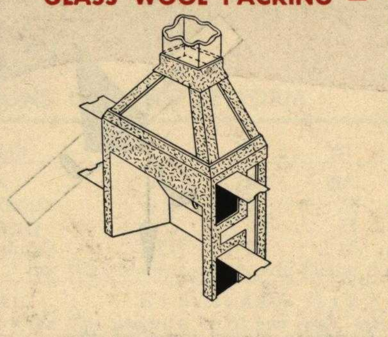


These five points are particularly important:

1. *Always* provide air intake *and* outlet ducts at *both* sides of the unit. Without air circulation the metal would become over heated.
2. *Always* make these ducts *full sized* and smooth their entire length.
3. *Always* place heat outlet grilles as *high* as possible. Ducts must slope up, never be level.
4. *Always* place fan grilles at the floor intakes not at the outlets. Attach the fans to grilles before setting in the masonry. For wiring information, see page 5.
5. *Always* seal carefully with glass wool where ducts join metal form to prevent smoke or air leaks.

GLASS WOOL PACKING — This serves two purposes. It absorbs the slight heat expansi of the metal form, preventing cracking of the masonry, and it seals against possible smoke leaks or heat losses.

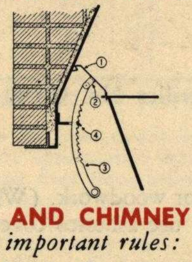
Separate the "bats" into pads about ¾" thick and apply them especially at the points illustrated — (1) around the opening, (2) at other corners of the form, (3 and 4) around the heat ducts and (5) at the flue connection.



LINTEL BAR — Use a *substantial* lintel bar to support the opening. Any spring or sag means a cracked facing.

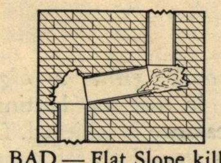
DAMPER CONTROLS — *Ratchet Control* — Sometimes Ratchet Catch (4) is bent in shipment so that the teeth in the Handle (3) do not engage. To adjust, bend the Catch up or down slightly with a hammer.

Rotary Control — See separate instructions packed with parts.

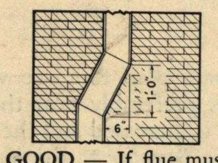


FLUE AND CHIMNEY — For strong, smoke-free draft *follow these important rules:*

1. Use the flue tile size marked on the *Benefire* name plate for chimneys over 20 feet high (hearth to flue top).
2. Use 13 x 13" tile on No. 35 Benefire and 13 x 18" tile on No. 43 if chimney is 16 to 20 feet high. A new *Benefire* feature is the adjustable flue connection. On those firepl sizes (Nos. 35 and 43 only) where the next larger flue should be used *if the chimney* is under 20 feet high, just cut the "tack welds" at the top of the form and bend the front (if No. 35) or sides (if No. 43) out to fit the tile.
3. Chimneys under 16 feet high frequently smoke.
4. Always provide a separate flue for each fireplace, furnace or stove. Bad draft almost always results if you "double up."
5. If the flue must be slanted, do not pitch it more than 6 inches for each foot of rise, and cut the flue tile lengths to fit each other at the turns as pictured below.

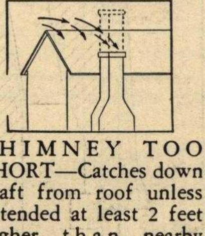


BAD — Flat Slope kills draft. Soot clogs gather at turns. Untiled sections burn out.

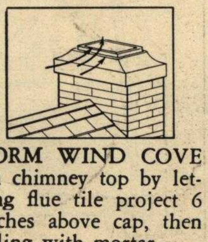


GOOD — If flue must be slanted, keep it steep and cut ends of tile to fit at turns.

6. Build the top of the chimney *at least* 2 feet above nearby roof peaks or other objects which cause down drafts. Avoid chimney pots, screens, etc. If they must be used, be sure they are sized for *full flue* capacity.



CHIMNEY TOO SHORT—Catches down draft from roof unless extended at least 2 feet higher than nearby roofs.



FORM WIND COVE on chimney top by letting flue tile project 6 inches above cap, then filling with mortar.

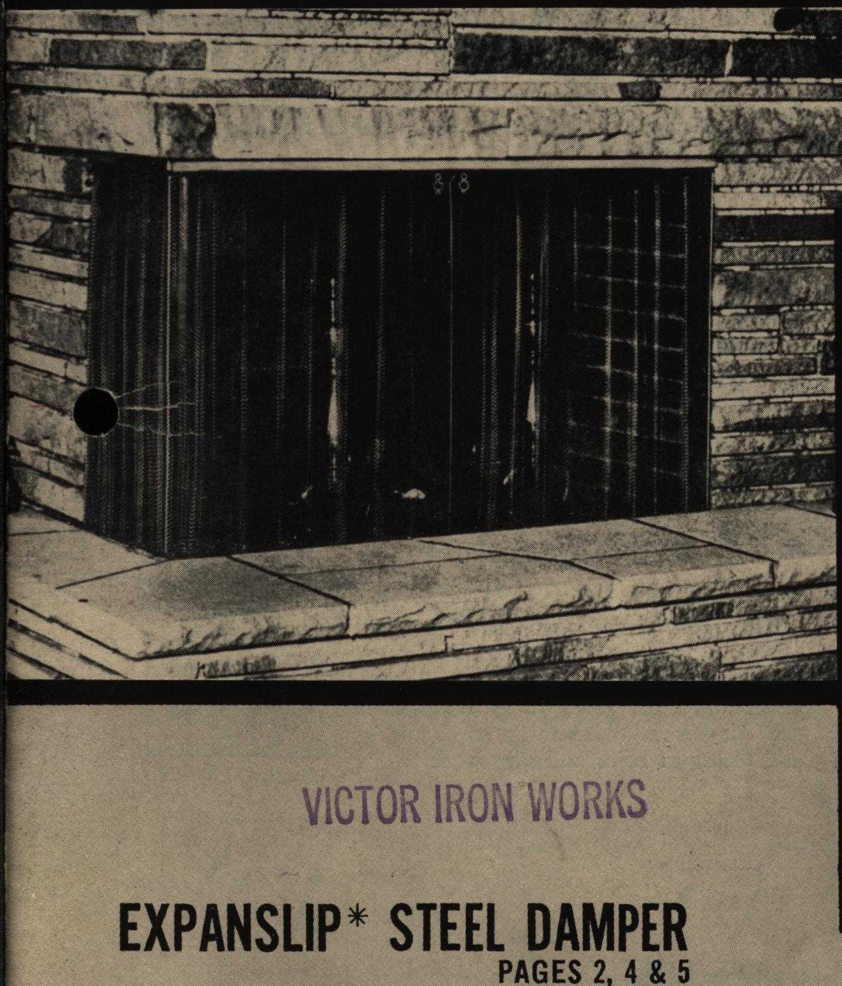
7. Leave the damper valve open during construction.

DO NOT BUILD A FIRE in the fireplace for at least 10 days. The masonry must dry and cure thoroughly or it will crack.

A.I.A. File No. 14-E

A THROAT DAMPER

FOR *ANY* FIREPLACE



VICTOR IRON WORKS

EXPANSLIP* STEEL DAMPER
PAGES 2, 4 & 5

STEEP-SLOPE CAST-IRON DAMPER
PAGES 3, 4 & 5

BENEFORM* UNIVERSAL DAMPER
THE ONLY ANSWER FOR UNUSUAL FIREPLACES
PAGES 6, 7, 8, 9 & 10

OTHER CONSTRUCTION ITEMS
PAGES 11 & 12

RECEIVED
MAR 10 1958
VICTOR IRON WORKS

BENNETT - IRELAND INC
Chartered in 1906
NORWICH, NEW YORK MELROSE PARK, ILL.

A.I.A. File No. 14-E

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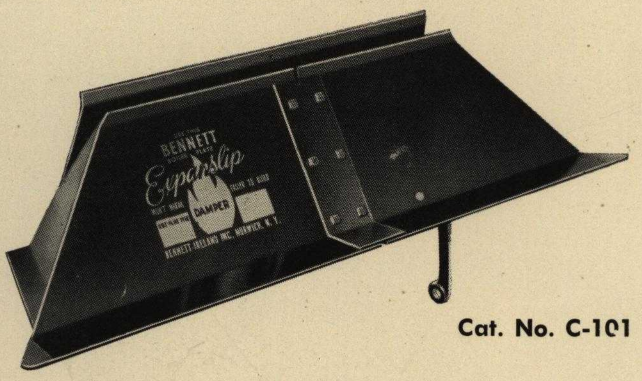
*Reg. U. S. & Canada Pat. Off.

BENNETT *Expanslip*® STEEL PLATE DAMPER

Over 25 years of making fireplace building materials and studying masons' problems have helped us design our products so that they please all masons who use them. The size and shape of all items are based on standard brick to save cutting and fitting, making the mason's work easier. Long experience also has shown us how to build better products at low cost. Each year more masons use Bennett Products — *Bennett is "The Mason's Line."*

Do You Like a Steel Damper? . . . Use "Expanslip"
Prefer Cast Iron? . . . Then Choose "Steep-Slope"



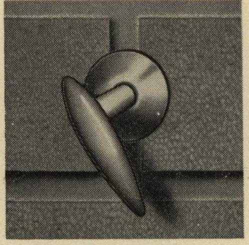
Cat. No. C-101

THE EXPANSLIP FEATURE

Many fireplaces develop unsightly cracks in the facing after use. Often this is caused by expansion in the frame of the damper, when heated, thrusting against the masonry.

In the front of the Expanslip damper (all sizes over No. 33) is a simple, sturdy slip joint. As heat expands the damper, it "telescopes" instead of damaging the masonry or itself.

RATCHET OR ROTARY CONTROL



Regularly supplied with ratchet (inside) control, extra parts easily convert Bennett dampers, except Sizes 48, 60 and 72, to rotary (outside) control with convenient decorative solid brass turn-knob.

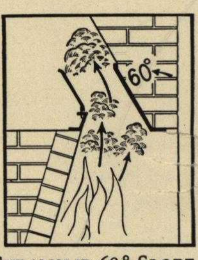
PROPORTIONAL SIZING

Greater throat capacity is required for wider fireplaces because they are also higher and deeper. Expanslip dampers are larger in *all* dimensions as the width increases. Also the thickness of boiler plate runs from 1/8" in Sizes 24 through 42 to 3/16" in No. 48 and 1/4" in Sizes 60 and 72.

Steel (heavy boiler plate) dampers have thoroughly proved their long life in the heat and corrosive fumes of a fireplace. Not brittle like cast iron, there is no *expensive and troublesome breakage* in shipping, handling, setting or after it is built in. Consequently *Expanslip* is preferred by an increasing number of masons.

HIGH 60° FRONT

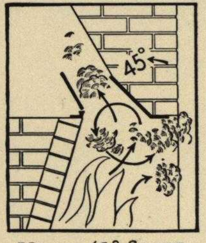
One purpose of any damper is to form an inverted "funnel" for the easy passage of smoke as it "pours" from the firebox up to the flue. Most dampers have a very flat (45°) slope which is much more likely to "spill" smoke into the room than Expanslip's steep and high 60° front, which offers one-third less restriction — often the difference between a successful fireplace and a smoky one.



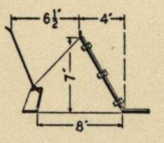
EXPANSLIP 60° SLOPE

EASY SETTING

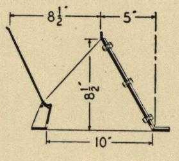
This high front (from 7 to 11 inches) carries the shaping of the throat much higher and makes the mason's work easier and more sure. In all other ways the damper is planned to save cutting and fitting of brick and save work.



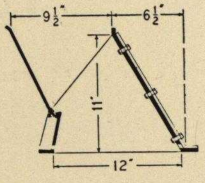
USUAL 45° SLOPE



Nos. 24 through 42



No. 48



Nos. 60 and 72

BENNETT'S SIZE NUMBERS

Bennett size numbers show the actual width across the *inside* of the damper at the front. It is therefore proper to build the fireplace opening as much as two inches wider than our rated size. Some manufacturers number their dampers taking this, or an even closer safety margin, into consideration.

C-101 SIZE OF DAMPER	No. 24	No. 30	No. 33	No. 36	No. 42	No. 48	No. 60	No. 72
Foundation Size (min.) see p. 4	48 x 24"	52 x 28"	56 x 28"	68 x 28"	72 x 28"	76 x 32"	96 x 36"	116[illegible]
Width of Opening (max.)	26"	32"	35"	38"	44"	50"	62"	74
Height of Opening (max.)	30"	30"	30"	30"	30"	36"	42"	42"
Depth of Opening (aver.)	16-18"	18-21"	18-21"	18-21"	18-21"	24-26"	26-36"	30-36"
Flue Size (over 20' high)	8½ x 8½"	8½ x 13"	8½ x 13"	13 x 13"	13 x 13"	13 x 18"	18 x 18"	18 x 18"
(under 20' high)	8½ x 8½"	8½ x 13"	13 x 13"	13 x 13"	13 x 18"	18 x 18"	18 x 18"	18 x 24"
Width of Front Flange	*2¼"	*2¼"	*2¼"	*2¼"	1½"	1½"	1½"	1½"

* Front Flange may be used to support arch, saving need of Lintel Bar.

BENNETT *Steep-Slope* CAST-IRON DAMPER

Here's the new 10″ throat cast iron damper which has all the features that masons have been asking for. It's sized and shaped for standard brick to save cutting and fitting, making the mason's work easier. And of course it's the same high quality that you've come to expect from Bennett's modern foundry. It's available with cast iron valve (C-106) or with *unconditionally guaranteed* steel valve (C-105). Let's look at some of the new features:

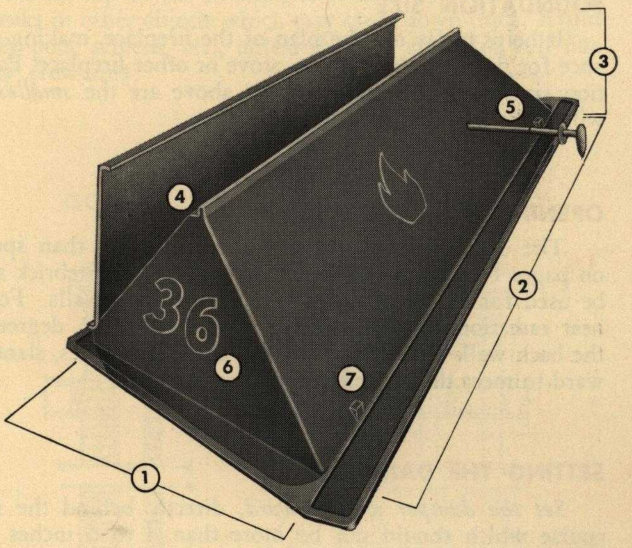
1. NEW DEEPER THROAT — The new 10″ deep throat is your assurance of maximum draft because the deeper frame and wider valve have full capacity for the largest fires.

2. FULL RATED SIZES — Bennett size numbers show the actual width across the *inside* of the damper. This means you can build the fireplace as much as two inches wider than our rated size.

3. HEIGHT INCREASED — The height has been increased to provide more gradual, "Steep-Slope," minimum-resistance, funneling of the smoke.

4. NEW V-SEAT VALVE CLOSURE — New interlocking closure along entire top and full overlap at ends positively prevents heat loss and cold air down drafts.

5. NEW EASY ROTARY CONTROL — Extremely simple, smooth-working, with new easy-turn handle, is interchangeable with standard ratchet type on all sizes.



Cat. No. C-105, C-106

6. NEW SURE SIZE IDENTIFICATION IN STOCK — Each damper has the size "cast right in" at both ends and on front flange. Easy to read even in a stock pile.

7. NEW LEVEL STACKING — Stacking lugs allow neat, level stacking.

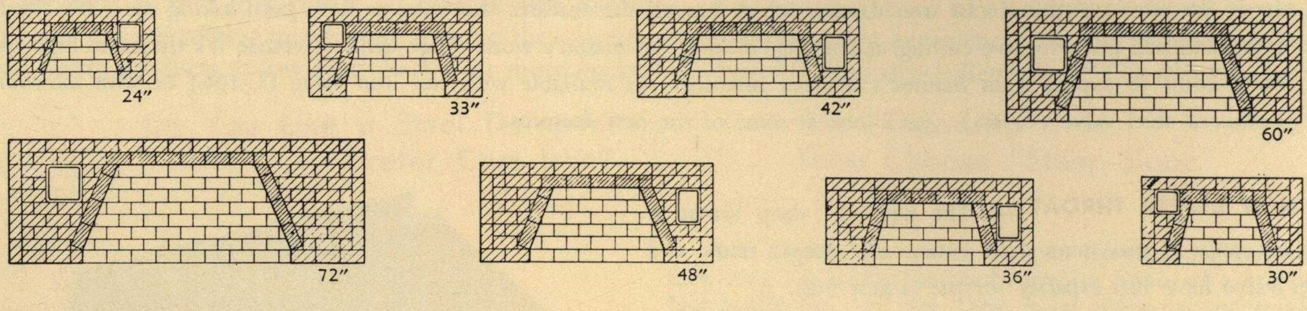
All these improvements in a damper which already leads the market mean that *Bennett's "Steep-Slope"* gives you the greatest value by far in ease of construction, assurance of strong draft and long trouble free life.

SIZES AND SPECIFICATIONS

C-105 C-106 SIZE OF DAMPER	No. 30	No. 33	No. 36	No. 42	No. 48
Foundation Size (min.) see page 4	52 x 28″	56 x 28″	68 x 28″	72 x 28″	76 x 32″
Width of Opening (max.)	32″	35″	38″	44″	50″
Height of Opening (max.)	30″	30″	30″	30″	32″
Depth of Opening (aver.)	18-21″	18-21″	18-21″	18-21″	22-25″
Flue Size (over 20′ high)	8½ x 13″	8½ x 13″	13 x 13″	13 x 13″	13 x 18″
(under 20′ high)	8½ x 13″	13 x 13″	13 x 13″	13 x 18″	18 x 18″
Width of Front Flange	2″	2″	2″	2″	2″

SUGGESTIONS FOR FIREPLACE CONSTRUCTION

TYPICAL HEARTH LEVEL PLANS — To Scale, Count Bricks



FOUNDATION SIZE

It helps to lay out the plan of the fireplace, making allowance for flues for the furnace, stove or other fireplace. Foundation sizes vary and those shown above are the *smallest* that will make a well proportioned job.

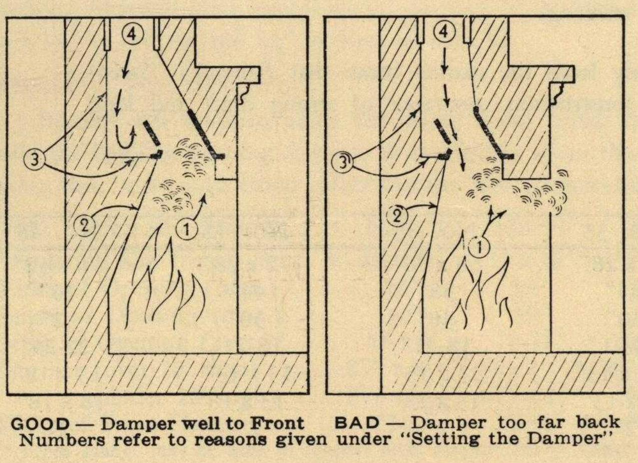
OPENING SIZE AND FIREBOX

The opening must not be wider or higher than specified on pages 1 or 3 for the size of damper used. Firebrick should be used for the firebox hearth, side and back walls. For best heat radiation, each sidewall is angled about 15 degrees and the back wall, after rising straight about 10 inches, slants forward to meet the back flange of the damper.

SETTING THE DAMPER

Set the damper way forward, directly behind the facing course which should not be more than 4 to 6 inches thick. There are four reasons (also see diagrams below) —

1. A thick arch causes smoking.
2. Gives a better heat-reflecting slant to the back wall.
3. Gives room for a broad smoke shelf and generous smoke funneling chamber.
4. Prevents down-drafts from blowing directly into room.



GOOD — Damper well to Front **BAD** — Damper too far back
Numbers refer to reasons given under "Setting the Damper"

LINTEL SUPPORT

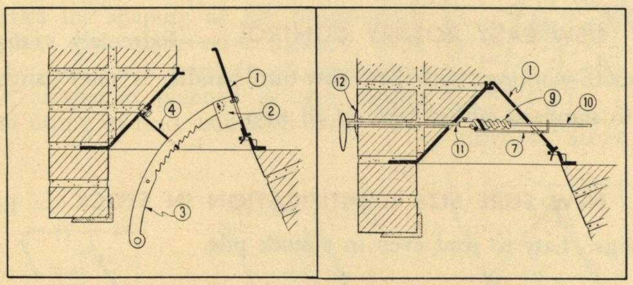
Use a substantial lintel support for the arch. Any spring or sag means a cracked facing.

It is best practice to use a separate lintel bar, setting the damper up 4" to 6" above the arch. However. where cost counts, Sizes 24 through 36 of the *Expanslip* damper, and all sizes of C-105 and C-106, may be set at the lintel level and the front flange used for the support bar.

DAMPER CONTROLS (See Diagram Below)

RATCHET CONTROL — The Ratchet Handle (3) and Catch (4) are bolted to Valve (1). Use this bolt and washer to attach Catch to the inside face of frame so that it hangs below the bolt. Pass Handle, with teeth facing back, up through Catch (4) and attach to Bracket (2) with cotter pin supplied.

RATCHET CONTROL ROTARY CONTROL



Rotary Controls are not available for Nos. 48, 60 or 72 Expanslip Damper.

For directions on installing Rotary Control see Form DC-100-R packed with those parts.

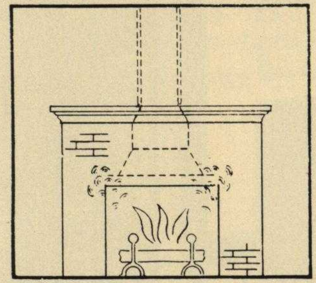
Leave the damper valve open during construction. It is less liable to get jammed by mortar falling down the flue, and the masonry will dry better.

DO NOT BUILD A FIRE in the fireplace for at least 10 days. The masonry must dry and cure thoroughly or it will crack.

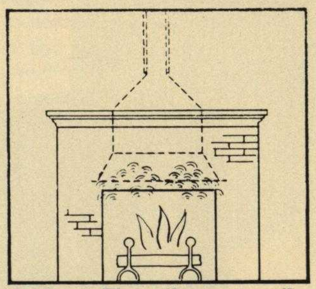
SUGGESTIONS FOR FIREPLACE CONSTRUCTION

SMOKE SHELF AND FUNNELING CHAMBER

Make these as large as possible and corbel into the flue tile size very gradually — no more than 6" per foot of rise to give good "funneling" for smoke.

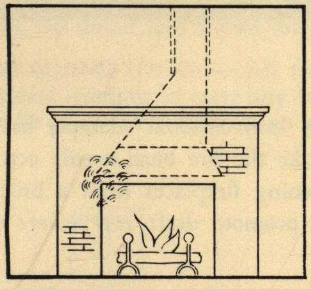


BAD — Too small a damper used. Makes fireplace smoke because both the throat passage and the funneling chamber are too small.

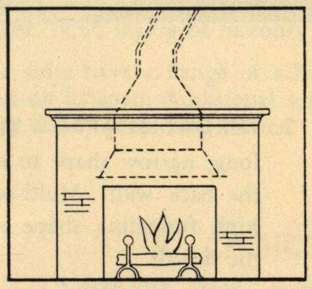


BAD — Flue tile too small. Use full size specified on page 1. THIS IS MOST COMMON OF ALL CAUSES OF BAD DRAFT.

FLUE AND CHIMNEY



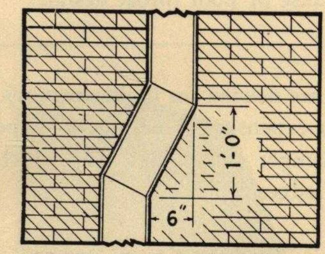
BAD — Do not off-set the funneling chamber. Will smoke at opposite corner.



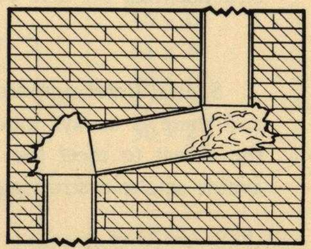
GOOD — If flue must be off-set, start the slant after it leaves funneling chamber.

More fireplaces smoke because the flue is too small or too short than for any other single cause. *Do not skimp on the flue tile size.* And if the chimney is to rise less than 20 feet above the hearth, check the tables on pages 2 and 3 to see if the next larger size should be used.

Always provide a separate flue for each fireplace, furnace and stove. Bad draft almost always results if you try to "double-up."

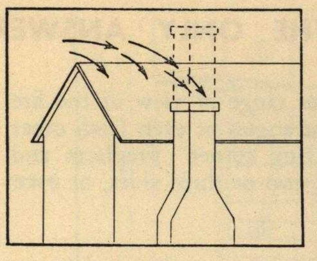


GOOD — If flue must slant, keep it steep and cut tile to fit at turns.

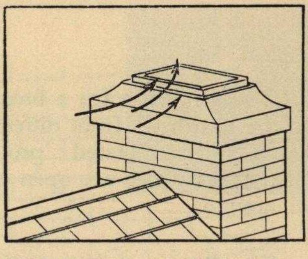


BAD — Flat run kills draft. Soot-clogs gather at turns. Untiled areas make fire hazard.

Always, for fire safety and good draft, use flue lining tile carefully fitted if it turns. Avoid sharp turns and never pitch it more than 6 inches per foot of rise.



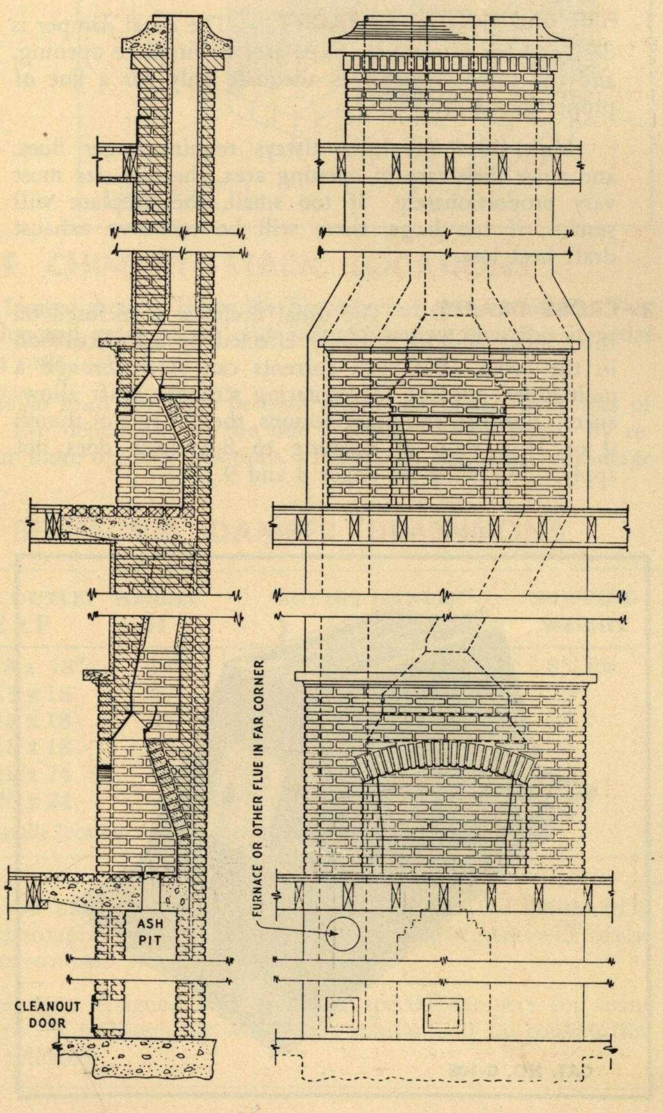
CHIMNEY TOO SHORT — Catches down draft from roof. Should rise at least 2 ft. above any nearby point.



FORM WIND COVE on chimney top by letting 4" to 6" of tile project above cap then filling with mortar.

Build the top of the chimney *at least 2 feet* above nearby roof peaks or other objects which may cause down-draft. Avoid chimney pots, screens, etc., unless they are sized for full flue capacity (few are).

TYPICAL DETAILS OF GOOD FIREPLACE CONSTRUCTION



THE ONLY ANSWER FOR UNUSUAL FIREPLACES

Today's desire for a broader range of view of the fire on the hearth — from different angles or even from other rooms — has created "projecting corner" fireplaces and other types which are open on two or three sides, or even all around.

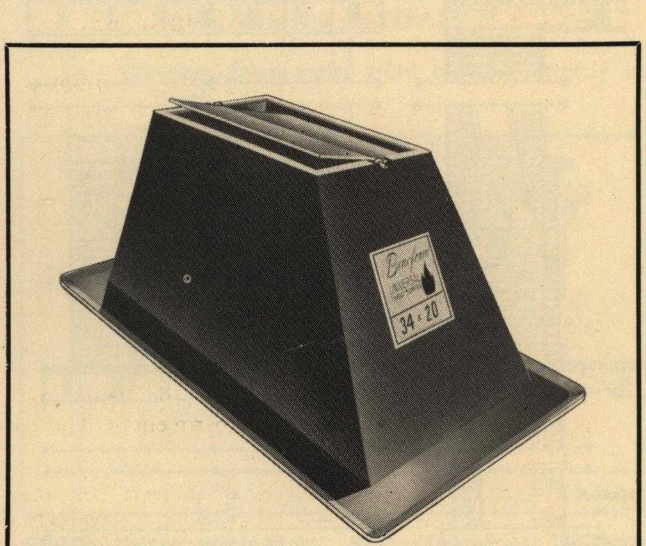
The *Beneform Universal Damper* was designed by an organization which has specialized on fireplaces since 1923, to meet problems of draft and masonry construction created by this new trend. It is based on experience gained from building many thousands of similar dampers for such unusual fireplaces as those in Levitt homes where *construction costs* are just as vital as *strong, smoke-free draft.*

The *usual Throat Damper* is shaped and proportioned for the conventional single opening fireplace. It is not right for the newer multi-opening fireplaces for several reasons: —

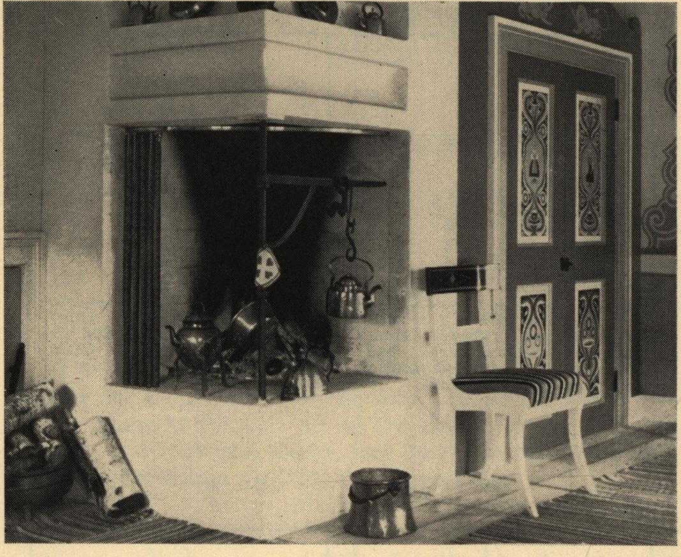
1. **FLUE and THROAT CAPACITY** — The usual damper is designed for a relatively fixed area of fireplace opening, and the throat capacity is adequate only for a flue of proportionate ratio.

   Multi-sided fireplaces always require larger flues, and since they vary in opening area, the flue size must vary proportionately. If too small, the fireplace will smoke; if too large, there will be excessive exhaust draft heat loss.

2. **CROSS DRAFTS** — The usual fireplace is inclosed on three sides and so is rarely effected by air circulation in the room. But such currents can *flow through* a multi-sided opening, necessitating stronger draft allowances. For this, and other reasons, the old rule-of-thumb 9 or 10:1 ratio of opening to flue areas does not apply. (See tables on pages 8 and 9.)



CAT. NO. C-108



3. **THROAT SHAPE** — The "conventional" damper has a long, narrow shape to make the fire burn evenly across the back wall. Multi-opening fireplaces need a broad, high funneling shape to promote draft *everywhere* on the hearth.

   Also a high, gradually *"funneled"* throat offers less obstruction to draft — *important in these days of lower chimneys.*

4. **CONSTRUCTION PROBLEMS** — The "conventional" damper is designed for only one set form of construction and is adaptable to other types only at high cost in the mason's time. It is highly unsatisfactory to use two ordinary dampers not only for reasons of higher construction cost but also because of poor throat design.

   Special lintel supports are needed for multi-openings, and there is always much expensive corbeling to shape the throat to meet the damper frame in a way which avoids smoke-obstructing ledges.

   Also, the chimney rarely stands directly above these newer types of fireplaces but is set to one side or another in a wall. With the usual damper this requires slanting and turning the flue, adding to construction costs and weakening the draft.

CHECK THESE 8 IMPORTANT *Beneform®* UNIQUE ADVANTAGES

1. **FLUE TILE** — Size is varied in proportion to size and area of the fireplace opening (see pages 8 and 9), avoiding either weak or excessive draft.
2. **CHIMNEY LOCATION** — See Diagram 2 for wide flexibility possible with *Beneform* in "stack" location. This often saves costly draft restricting turns or slanting of the flue.
3. **COMBUSTION CHAMBER** — This can be generous in size and yet so located that it does not interfere with other construction requirements.
4. **DOWN DRAFT SHELF** — *The flue tile must never be set directly above the damper outlet.* If it is, air puffs can blow straight down the chimney. By off-setting it, an effective baffle or "shelf" against down drafts is formed in the masonry.
5. **DAMPER VALVE** — The heavy valve pivots to tight closure, yet is removable. Permanent tension, unaffected by heat, allows exact draft adjustment.
6. **VALVE CONTROL** — Choose either the simple "Chain Pull" with heavy "O" and "C" pulls or the convenient outside, polished brass *"Rotary Control,"* shown at the right.
7. **COMPLETE THROAT FORM** of heavy steel properly and smoothly shapes the throat and allows low cost, rapid laying of masonry.

ALL-AROUND LINTEL — All four sides have a flange of adequate structural strength to carry any load on its span. Additional support must be provided if there is no post at any projecting corner.

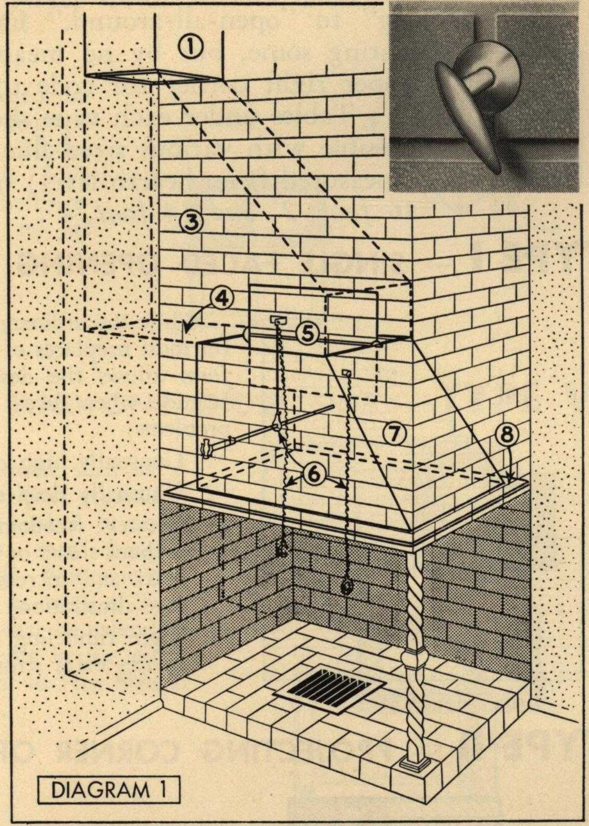


DIAGRAM 1

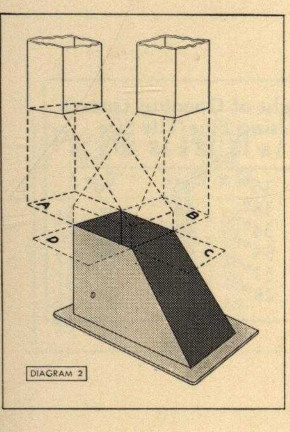


DIAGRAM 2

A CHOICE OF CHIMNEY STACK LOCATIONS

Often the "stack" cannot be located directly above the fireplace but must be off-set. This requires slanting or turning the flue and every mason and architect knows how this impedes the draft and adds to construction costs.

Diagram 2 shows how the *down draft shelf* can be built at any one of the four sides of the damper outlet (A, B, C or D) depending on the best location for the stack. By reversing the damper, there are four more optional positions. This is an important advantage of *Beneform.*

UNIVERSAL BENEFORM DAMPER DIMENSIONS

RATED SIZE A x B	C	FLUE OUTLET E x F	HEIGHT H	ROTARY HANDLE* J	K	SHIPPING WEIGHT
26 x 26"	3"	18 x 18"	17"	8"	5"	85 lbs.
30 x 16	3	13 x 18	17	8	9	75
34 x 20	3	18 x 18	17	8	9	90
38 x 20	3	18 x 18	25	8	11	120
42 x 20	3	18 x 24	25	8	11	135
50 x 24	3	20 x 24	28	8	15	200

* This Handle location can be reversed to opposite side.

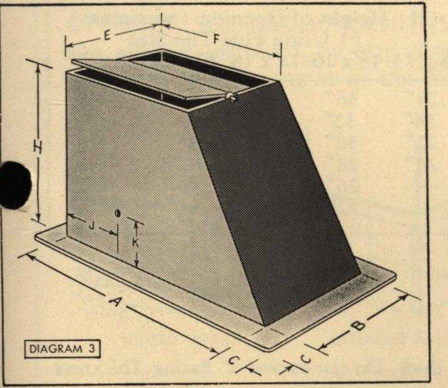


DIAGRAM 3

SPECIAL SERVICE. If you have problems or uncertainties about the design of a particular fireplace, our thoroughly experienced Engineering Department will advise with you gratis if sent *dimensioned prints or sketches.*

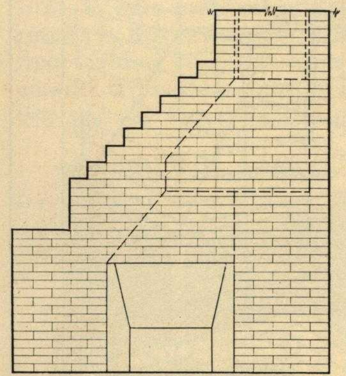
QUANTITY USERS. We have designed and produced special dampers for many Building Developers to specific requirements which save substantially on construction costs. Your inquiries are solicited.

HOW *Beneform*® ADAPTS ITSELF TO VARIOUS

Six basic *types* of fireplaces are being built today, ranging from the usual "single opening" to "open-all-around." Each type is described below together with diagrams suggesting some, but by no means all, of the possible construction details. (See *legend* in upper right corner for code to symbols.)

Tables under each type show the hearth size and the maximum height of opening possible with various sized flue tile. These opening heights are based on a chimney height (measured from hearth level) of 20 feet. *For 18 foot chimneys reduce listed heights 1", for 16 foot, 2" and 14 foot, 4".*

TYPE I — SINGLE FACED OPENING


ILLUSTRATING OFF-SET FLUE

While the ordinary damper is adequate for most fireplaces of this type, the *Beneform* allows the designer much greater latitude when faced with the following problems:

1. Unusually high openings.
2. Unusually deep openings.

†3. Greater freedom of flue location without slants or turns which weaken draft and increase construction cost (see illustration).

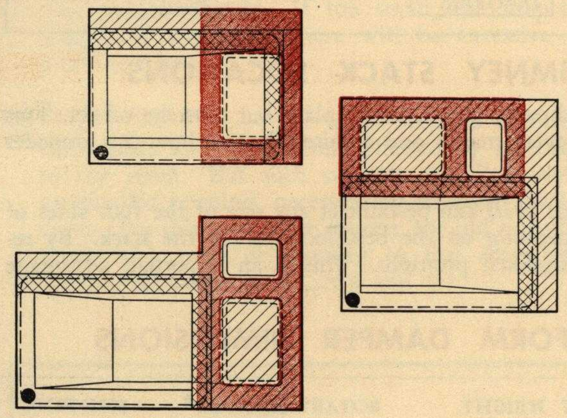
†4. High "funneling" of *Beneform* throat assures extra strong draft.

Damper Size A x B	Hearth* Size W x D	(H) Height of Opening (max.) (F) Using Flue Tile Size 8½ x 13	13 x 13	13 x 18	18 x 18
26 x 26"	26 x 30"	36"	46"	56"	—
30 x 16	30 x 20	32"	42"	52"	—
34 x 20	34 x 24	30"	38"	48"	—
38 x 20	38 x 24	28"	36"	46"	56"
42 x 20	42 x 24	26"	34"	44"	54"
50 x 24	50 x 28	22"	30"	38"	46"

† Points 3 and 4 are especially important if the chimney is low. The shorter the stack, the weaker the draft.

Also see Type IV for "semi-recessed" (i. e., semi-projecting) openings.

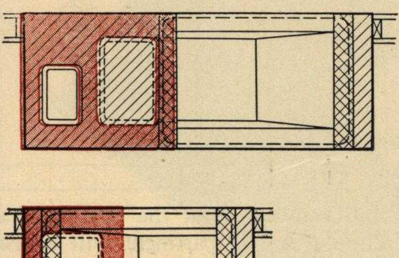
TYPE II — PROJECTING CORNER OPENING

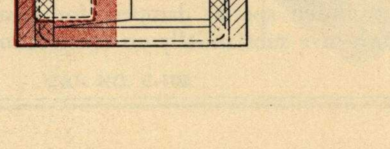


This is the most general type of multi-opening fireplace. Illustrated are various possible flue arrangements showing the adaptability of *Beneform* to different floor plan requirements.

Damper Size A x B	Hearth* Size W x D	(H) Height of Opening (max.) (F) Using Flue Tile Size 13 x 13	13 x 18	18 x 18	20 x 24
26 x 26"	30 x 30"	28"	36"	46"	56"
30 x 16	34 x 20	30"	38"	48"	—
34 x 20	38 x 24	26"	34"	44"	54"
38 x 20	42 x 24	24"	34"	42"	48"
42 x 20	46 x 24	24"	32"	40"	48"
50 x 24	54 x 28	20"	28"	36"	44"

TYPE III — OPENINGS IN TWO ROOMS



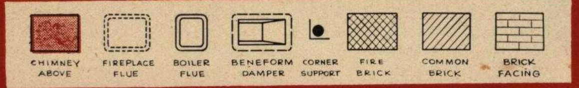


This type has several interesting applications. With one fire, there is cheer in two rooms or even a fine grille in the kitchen. Construction, too, is simple and very low cost.

Damper Size A x B	Hearth* Size W x D	(H) Height of Opening (maximum) (F) Using Flue Tile Size 13 x 13	13 x 18	18 x 18	20 x 24	24 x 24
26 x 26"	——	28"	36"	44"	—	—
30 x 16	30 x 24"	24"	32"	42"	—	—
34 x 20	34 x 28	22"	30"	38"	46"	—
38 x 20	38 x 28	20"	28"	36"	42"	—
42 x 20	42 x 28	—	26"	34"	40"	48"
50 x 24	50 x 32	—	22"	30"	36"	42"

* Based on Mantel Facing 4" thick. Do not exceed 6" Facing Thickness.

LEGEND



TYPES OF FIREPLACES AND FLOOR PLAN REQUIREMENTS

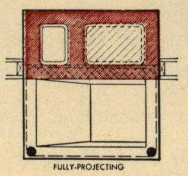
OPEN ON TWO SHORT AND ONE LONG SIDE — TYPE IV

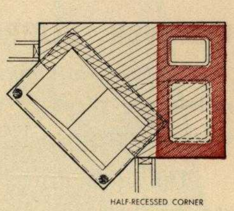
IF HALF RECESSED – See Table for Type II

IF FULLY PROJECTING – See Table below

Damper Size A x B	Hearth* Size W x D	(H) Height of Opening (max.) (F) Using Flue Tile Size 13x13	13x18	18x18	20x24	24x24
26 x 26″	34 x 30″	20″	26″	34″	37″	—
30 x 16	38 x 20	22″	30″	38″	—	—
34 x 20	42 x 24	20″	27″	35″	41″	—
38 x 20	46 x 24	—	25″	33″	39″	—
42 x 20	50 x 24	—	24″	32″	38″	44″
50 x 24	58 x 24	—	21″	28″	34″	40″

This type is used on mid-wall and diagonal corner location. Notice that it can be built "fully projecting" or "half recessed," adding to its adaptability.

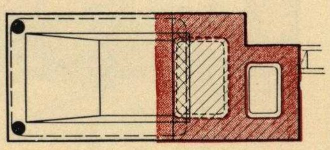

FULLY-PROJECTING

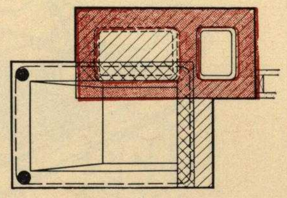

HALF-RECESSED CORNER

OPEN ON TWO LONG AND ONE SHORT SIDE — TYPE V

Damper Size A x B	Hearth* Size W x D	(H) Height of Opening (max.) (F) Using Flue Tile Size 13x13	13x18	18x18	20x24	24x24
26 x 26″	30 x 34″	21″	27″	35″	38″	—
30 x 16	34 x 24	20″	26″	34″	—	—
34 x 20	38 x 28	—	22″	30″	36″	—
38 x 20	42 x 28	—	—	29″	35″	—
42 x 20	46 x 28	—	—	28″	34″	40″
50 x 24	58 x 32	—	—	24″	30″	36″

In feature positions, such as at the end of a partition separating living room from kitchen or nook, this type opens even broader ranges than Type II. Notice in this shape of opening as well as Type IV that side walls may be extended, allowing adjustments in the ratios of Opening Height to Flue Size in the opposite table.

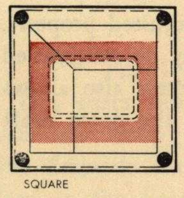


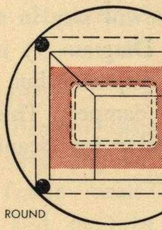


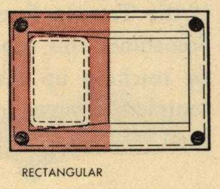
OPEN ALL AROUND — TYPE VI

Damper Size A x B	Hearth* Size W x D	(H) Height of Opening (maximum) (F) Using Flue Tile Size 13 x 18	18 x 18	20 x 24	24 x 24
26 x 26″	34 x 34″	20″	28″	32″	—
30 x 16	38 x 24	22″	30″	—	—
34 x 20	42 x 28	20″	28″	32″	—
38 x 20	46 x 28	—	26″	31″	—
42 x 20	50 x 28	—	24″	30″	35″
50 x 24	58 x 32	—	21″	27″	32″

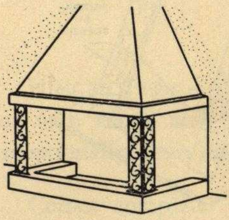
Most "spectacular" of all fireplaces, this type has been prohibitive in cost for most homes. Now "stock" *Beneform* eliminates specially engineered construction. Use size 26 x 26″ for round or square hearths, other sizes for rectangular.

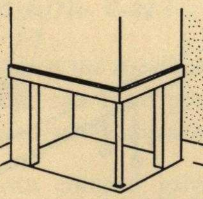

SQUARE

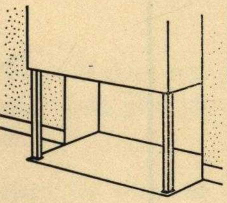

ROUND

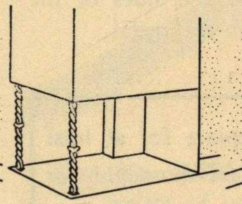

RECTANGULAR

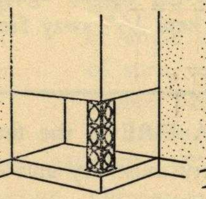
OPENING SIZE MODIFICATIONS. In some cases the *effect* of larger or higher openings can be created, or the firebox size actually increased, by extending the side walls or raising or "curbing" the hearth as suggested below. This allows a proportionate adjustment in the flue sizes specified in the tables on pages 8 and 9.

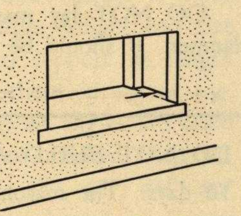

"CURBED" HEARTH


EXTENDED SIDEWALLS

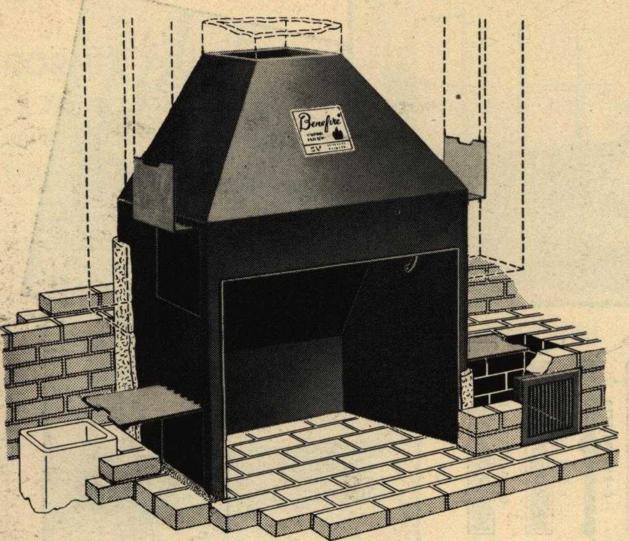

SEMI-RECESSED


SEMI-SIDEWALL


RAISED HEARTH


ENLARGED FIREBOX

OTHER BENNETT FIREPLACE PRODUCTS



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AND OTHER BENNETT HEARTH ACCESSORIES

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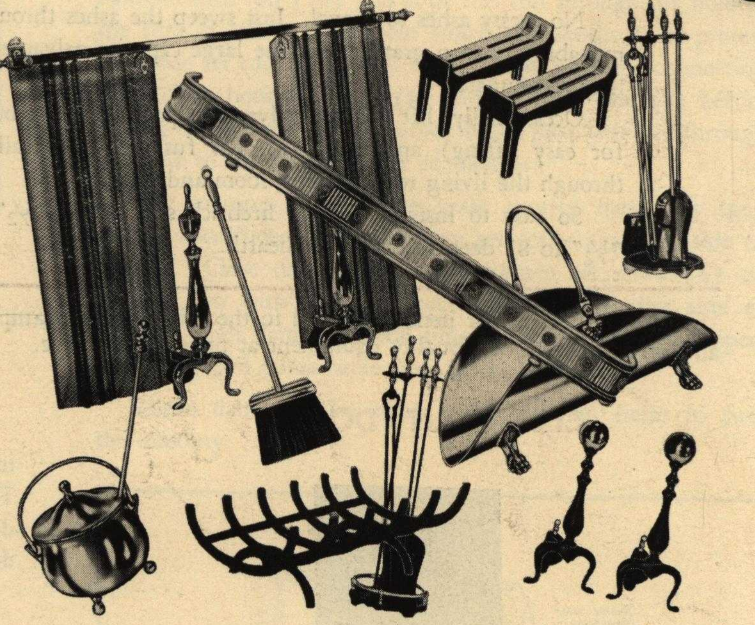

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